

CLAIMS

What is claimed is:

1. An apparatus for continuously producing and dividing decorative grass from a web of strands of material having predetermined widths, the apparatus comprising:
 - a cutter adapted to receive the web of strands of material having predetermined widths, the cutter cutting the web of strands at a constant rate, to produce a plurality of quantities of decorative grass having a predetermined length; and
 - means for dividing each quantity of decorative grass into discrete aggregates of decorative grass.
2. The apparatus of claim 1, further comprising a programmable logic controller monitoring and regulating the rate at which the cutter cuts the web of strands of material to produce each quantity of decorative grass.
3. The apparatus of claim 1, further comprising a programmable logic controller monitoring and regulating the rate at which the quantities of decorative grass are produced.

4. An apparatus for continuously producing and dividing decorative grass from a web of strands of material having a predetermined width, the apparatus comprising:

means for producing a continuous sheet of flexible material having a thickness, a width, a density and a predetermined travel speed;

means for slitting the continuous sheet of material to produce the web of strands of material having predetermined widths;

a cutter adapted to receive the web of strands of material having predetermined widths, the cutter cutting the web of strands at a constant rate, to produce a plurality of quantities of decorative grass having a predetermined length; and

means for dividing the quantities of decorative grass into discrete aggregates of decorative grass.

5. The apparatus of claim 4, wherein the cutter further comprises:

a rotatable blade; and

means for rotating the rotatable blade at a predetermined rotational rate corresponding to the travel speed of the continuous sheet of material so that quantities of decorative grass are produced having a predetermined length.

6. The apparatus of claim 5, wherein the apparatus further comprises:
means for determining the predetermined travel speed of the continuous sheet of material and the predetermined rotational rate of the rotatable blade; and
means for adjusting the travel speed of the continuous sheet of material and the rotational rate of the rotatable blade to produce quantities of decorative grass at the predetermined rate.
7. The apparatus of claim 1, wherein the cutter includes a cutter housing having a cutter exit for the discharge of the strands of decorative grass.
8. The apparatus of claim 7, wherein the means for dividing the strands of decorative grass includes at least one partition defining a plurality of channels, at least one partition cooperating with the cutter exit to apportion each quantity of decorative grass into discrete aggregates of decorative grass.
9. The apparatus of claim 8, wherein the apparatus further comprises:
a plurality of bagging assemblies, each bagging assembly capable of accumulating a predetermined number of discrete aggregates of decorative grass to form a charge of decorative grass and disposing the charge of decorative grass into a bag; and

a plurality of duct assemblies communicating with the channels and the bagging assemblies for transporting the discrete aggregates of decorative grass from the channels to the bagging assemblies.

10. The apparatus of claim 9, wherein each duct assembly includes a duct extending from one of the channels to one of the bagging assemblies, and a blower for producing an air flow within the duct.

11. The apparatus of claim 9, further comprising a bag handler for positioning the bag to receive the charge of decorative grass.

12. The apparatus of claim 11, wherein the bag handler is movable at a bagging interval between a fill position and a discharge position.

13. The apparatus of claim 12, further comprising a programmable logic controller regulating the bagging interval of the bag handler based on the number of cuts made by the cutter.

14. The apparatus of claim 12, further comprising a programmable logic controller regulating the bagging interval of the bag handler based on an elapsed interval of time.

15. The apparatus of claim 9, wherein each of the bagging assemblies includes a plurality of magazines movable at a bagging interval between a fill position and a discharge position whereby discrete aggregates of decorative grass are accumulated in the magazines in the fill position to form the charges of decorative grass, the charges of decorative grass being discharged into a bag in the discharge position.

16. The apparatus of claim 15, wherein each bagging assembly includes an inserter positioned for discharging the charges of decorative grass into the bag.

17. The apparatus of claim 16, wherein the inserter comprises a pneumatic cylinder having a piston which is extendable through the magazine positioned in the discharge position.

18. The apparatus of claim 15, further comprising a programmable logic controller outputting signals to cause the magazines to move between the fill position and the discharge position.

19. The apparatus of claim 18, wherein the programmable logic controller regulates the bagging interval based on the number of cuts made by the cutter.

20. The apparatus of claim 18, wherein the programmable logic controller regulates the bagging interval based on an elapsed interval of time.

21. A method for making decorative grass from a continuous sheet of material, the method comprising the steps of:

slitting a continuous sheet of material to produce a web of strands of material;

cutting across the web of strands of material at a cutting rate to produce a quantity of decorative grass having a predetermined length; and dividing the quantity of decorative grass into a plurality of discrete aggregates of decorative grass.

22. A method for making decorative grass from continuous sheet material, the method comprising the steps of:

providing a continuous sheet of material having a sheet width, a sheet thickness and a sheet density;

selecting a predetermined length and width for decorative grass, and at least one predetermined weight for charges of decorative grass to be bagged;

selecting the number of discrete aggregates of decorative grass produced per cut and the weight of each discrete aggregate of decorative

grass such that the sum of the weight of one or more discrete aggregates of decorative grass substantially totals the predetermined weight of a charge of decorative grass;

slitting the continuous sheet material to produce a web of strands of material;

cutting across the web of strands of material at a constant rate corresponding to the predetermined length of the decorative grass to make a quantity of decorative grass; and

dividing, at each cut, the quantity of decorative grass into the predetermined number of discrete aggregates of decorative grass per cut.

23. A method for making and bagging decorative grass from continuous sheet material, the method comprising the steps of:

providing a continuous sheet of material having a sheet width and a sheet density;

measuring the thickness of the sheet material;

selecting a length and width for a decorative grass, and at least one predetermined weight for charges of decorative grass to be bagged;

selecting the number of discrete aggregates of decorative grass produced per cut and the weight of each discrete aggregate such that the sum of the weight of one or more discrete aggregates of decorative grass totals the predetermined weight of a charge of decorative grass;

slitting the continuous sheet of material to produce a web of strands of material;

cutting across the web of strands of material at a constant rate corresponding to the predetermined length of the decorative grass to make a quantity of decorative grass;

dividing the quantity of decorative grass into the predetermined number of discrete aggregates of decorative grass; and

bagging the discrete aggregates of decorative grass so that the predetermined weights of charges of decorative grass are bagged.

24. The method of claim 23 wherein the step of providing a continuous sheet of material further comprises the steps of:

providing an extruder; and

injecting a foaming agent into the extruder to lessen the density of the continuous sheet of material produced by the extruder.

25. The method of claim 23 wherein the step of providing a continuous sheet of material further comprises the steps of:

providing an extruder; and

introducing an extrusion material containing a foaming agent into the extruder.

26. A method for continuously producing and bagging decorative grass, the method comprising the steps of:

- a. producing at a predetermined rate a quantity of decorative grass comprising elongate and flexible filaments of material;
- b. dividing at a predetermined rate the quantity of decorative grass into a plurality of discrete aggregates of decorative grass using a divider having at least one partition;
- c. positioning a bag to receive at least one discrete aggregate of decorative grass;
- d. transferring at least one discrete aggregate of decorative grass into the bag based on the predetermined rate at which the decorative grass is being produced and on the number of partitions in the divider;
- e. removing the bag containing the decorative grass; and
- f. repeating steps c, d, e, and f.

27. The method of claim 26 further comprising the steps of:
- providing a continuous sheet of material having a thickness, a width, a density and a predetermined travel speed;
- slitting the continuous sheet of material to produce a web of strands of material having a predetermined width; and
- cutting the continuous strands of material into quantities of decorative grass.
28. The method of claim 27 further comprising the steps of:
- providing a rotatable blade; and
- rotating the rotatable blade at a predetermined rotational rate corresponding to the travel speed of the continuous sheet of material so that quantities of decorative grass are produced having a predetermined length.
29. The method of claim 28 further comprising the steps of:
- determining the predetermined travel speed of the continuous sheet of material and the predetermined rotational rate of the rotatable blade; and

adjusting the travel speed of the continuous sheet of material and the rotational rate of the rotatable blade to produce quantities of decorative grass at the predetermined rate.

30. An apparatus for continuously producing and bagging decorative grass, the apparatus comprising:

means for producing a continuous flexible sheet of material having a thickness, a width, a density and a predetermined travel speed;

means for slitting the continuous flexible sheet of material to produce a web of strands of material having a predetermined width;

a rotatable blade positioned to cut the web of strands of material to produce a quantity of decorative grass comprising elongate, flexible filaments;

means for rotating the rotatable blade at a predetermined rotational rate corresponding to the travel speed of the continuous flexible sheet of material so that the quantity of decorative grass is produced having a predetermined length and is produced continuously at a predetermined rate;

means for dividing at a predetermined rate the quantity of decorative grass into a plurality of discrete aggregates of decorative grass, said means having at least one partition;

means for positioning a first bag to receive at least one discrete aggregate of decorative grass;

means for transferring at least one discrete aggregate of decorative grass into the first bag, the weight and volume of the discrete aggregate of decorative grass being based on a predetermined number of revolutions of the rotatable blade and on the number of partitions in the aforementioned means for dividing the quantity of decorative grass; and

means for removing the first bag containing the discrete aggregates of decorative grass and for positioning a second bag to receive discrete aggregates of decorative grass.

31. The apparatus of claim 30 wherein the apparatus further comprises:

means for determining the predetermined travel speed of the continuous sheet of material and the predetermined rotational rate of the rotatable blade; and

means for adjusting the travel speed of the continuous sheet of material and the rotational rate of the rotatable blade to produce strands of decorative grass at the predetermined rate.

32. A method for continuously producing and bagging filaments of material, the method comprising:

- a. providing a continuous sheet of flexible material having a thickness, a width, a density and a predetermined travel speed;
- b. slitting the continuous sheet of flexible material to produce a web of strands of material having a predetermined width;
- c. rotating a rotatable blade at a predetermined rotational rate corresponding to the travel speed of the web of continuous strands of material so that a quantity of decorative grass is cut from the web of continuous strands of material having a predetermined length and is produced continuously at a predetermined rate;
- d. dividing at a continuous and predetermined rate the quantity of decorative grass into a plurality of discrete aggregates of decorative grass using a divider having at least one partition;
- e. positioning a bag to receive at least one discrete aggregate of decorative grass;
- f. transferring at least one discrete aggregate of decorative grass into the bag, the weight and volume of the discrete aggregate of decorative grass being based on a predetermined number of

revolutions of the rotatable blade and on the number of partitions in the divider;

- g. removing the bag containing the discrete aggregates of decorative grass; and
- h. repeating steps c, d, e, f, g, and h.

33. The method of claim 32 further comprising the steps of:

determining the predetermined travel speed of the continuous sheet of material and the predetermined rotational rate of the rotatable blade; and

adjusting the travel speed of the continuous sheet of material and the rotational rate of the rotatable blade to produce strands of decorative grass at a predetermined rate.

34. A method for continuously producing and bagging decorative grass, the method comprising the steps of:

- a. extruding continuous strands of flexible material with each strand having a predetermined thickness, width, density and travel speed;

- b. cutting at a continuous and predetermined rate the continuous strands of flexible material into a quantity of decorative grass comprised of elongate filaments of material;
- c. dividing the quantity of decorative grass into a plurality of discrete aggregates of decorative grass using a divider having at least one partition;
- d. positioning a bag to receive at least one discrete aggregate of decorative grass;
- e. transferring at least one discrete aggregate of decorative grass into the bag based on the predetermined rate at which the decorative grass is being produced and on the number of partitions in the divider;
- f. removing the bag containing the decorative grass; and
- g. repeating steps b, c, d, e, f, and g.

35. The method of claim 34 further comprising the steps of:

providing a rotatable blade; and

rotating the rotatable blade at a predetermined rotational rate corresponding to the travel speed of the continuous sheet of material so that quantities of decorative grass are produced having a predetermined length.

36. The method of claim 35 further comprising the steps of:

determining the predetermined travel speed of the web of strands of material and the predetermined rotational rate of the rotatable blade; and

adjusting the travel speed of the web of strands of material and the rotational rate of the rotatable blade to produce quantities of decorative grass at the predetermined rate.